

## ABSTRACT

Over the last two decades, India's microfinance movement has grown substantially in scale and outreach through Self-Help Groups (SHGs), but this expansion has not translated into commensurate improvements in performance. The surge in the loan-to-savings ratio from 4.3 to 11.7 over the past decade indicates rising financial stress and operational inefficiencies. Existing performance measurement frameworks are inadequate in capturing the dual objectives of financial sustainability and social impact. Hence, this doctoral thesis proposes a comprehensive performance management framework for women micro-credit groups or SHGs and examines it through a series of interrelated objectives. The study begins with a meta-analysis of 50 empirical studies to identify methodological factors influencing MFI efficiency estimation. Results show improved efficiency post-2008, with regional disparities as Asia and Africa lag behind South America and MENA. Studies employing DEA with more than two inputs/ outputs and Variable Returns to Scale (VRS) assumptions yield more robust estimates. Building on these insights, the next objective evaluates trends in operational, financial, social, and overall efficiency of South Asian MFIs using a dynamic Slack-Based Network DEA model. The analysis reveals persistently low operational efficiency, possible mission drift, and long-term financial sustainability challenges, particularly in Nepal, Afghanistan, Pakistan, and Sri Lanka. The second objective adapts the DEA-based framework to SHGs through an appropriately designed pilot study in eastern India. Using bootstrapped DEA, the study finds that while most SHGs are efficient, targeted adjustments like reducing group expenses by ₹885, increasing gross loan portfolios by ₹61,885, and raising group savings by ₹5,756 on average can enhance financial performance. Similarly, increasing active membership by 8% improves social efficiency. These findings are operationalized through a mobile application (e-SHG) providing group-specific recommendations and aiding the digitalization of their documentation and training needs. Next, a bootstrapped truncated regression (Simar & Wilson, 2007) is employed to identify exogenous determinants of efficiency. Group maturity, leader education, and effective management positively influence performance, while high loan-to-savings ratios and social heterogeneity have adverse effects. Finally, using Social Network Analysis and Random Forest regression, the study identifies network centrality and density as key drivers of financial and social efficiency, respectively. In summation, the thesis offers a data-driven, policy-relevant framework for managing SHG performance, combining empirical rigour with digital innovation to strengthen the microfinance delivery system in India.

**Keywords:** Microfinance, Micro-credit groups, SHGs, Performance management, Efficiency estimation, Data Envelopment Analysis (DEA), Random Forest Regression, Women empowerment